








UNC Modification	At what stage is this document in the process?
<p>UNC 0XXX:</p> <p><i>(Code Administrator to issue reference)</i></p> <p>Amendment to Gas Quality NTS Entry Specification at the St Fergus SAGE System Entry Point</p>	<div style="display: flex; flex-direction: column; gap: 5px;"> <div style="border: 1px solid green; background-color: #28a745; color: white; padding: 2px; display: flex; align-items: center; justify-content: center;"> 01 Modification </div> <div style="border: 1px solid #17a2b8; padding: 2px; display: flex; align-items: center; justify-content: center;"> 02 Workgroup Report </div> <div style="border: 1px solid #ffc107; padding: 2px; display: flex; align-items: center; justify-content: center;"> 03 Draft Modification Report </div> <div style="border: 1px solid #ffc107; padding: 2px; display: flex; align-items: center; justify-content: center;"> 04 Final Modification Report </div> </div>
<p>Purpose of Modification:</p> <p>This enabling Modification will facilitate a change to the current contractual oxygen limit at the St Fergus SAGE System Entry Point, through modification of a network entry provision contained within the Network Entry Agreement (NEA) between National Grid Gas plc and SAGE North Sea Limited (SNSL) in respect of the St Fergus SAGE Sub-Terminal</p>	
<p>Next Steps:</p> <p>The Proposer recommends that this Modification should be:</p> <ul style="list-style-type: none"> subject to Self-Governance assessed by a Workgroup <p>This Modification will be presented by the Proposer to the Panel on 20 June 2024. The Panel will consider the Proposer's recommendation and determine the appropriate route.</p>	
<p>Impacted Parties:</p> <p>High:</p> <p>Low: Transporters, Shippers and Consumers</p> <p>None:</p>	
<p>Impacted Codes:</p>	

None

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			 UKLink@xoserve.com
Timetable			
Modification timetable: <i>(amend as appropriate)</i>			
Pre-Modification Discussed		06 June 2024	
Date Modification Raised		07 June 2024	
New Modification to be considered by Panel		20 June 2024	
First Workgroup Meeting		04 July 2024	
Workgroup Report to be presented to Panel		[tbc]	
Draft Modification Report issued for consultation		[tbc]	
Consultation Close-out for representations		[tbc]	
Final Modification Report available for Panel		[tbc]	
Modification Panel decision		[tbc]	

Guidance on the use of this Template:

Please complete all sections unless specifically marked for the Code Administrator.

Green italic text is provided as guidance and should be removed before submission.

The Code Administrator is available to help and support the drafting of any modifications, including guidance on completion of this template and the wider modification process. Contact: enquiries@gasgovernance.co.uk or 0121 288 2107. Proposers may also wish to refer to the Modification Proposal Guidelines Document available at: <https://www.gasgovernance.co.uk/unc/templates>

1 Summary

What

The SAGE Terminal receives gas from some 40 different offshore Shippers from both the UKCS and the Norwegian Continental Shelf. The combination of increased volumes of rich Norwegian gas and continuing decline and near term cessation of heritage leaner gas volumes from the UKCS obviates blending alone as a means of achieving existing NTS export specification. Therefore, it is proposed to upgrade the current SAGE Nitrogen Injection Facilities to ensure continued specification compliant operations.

[This proposed Modification seeks to enable an increase in the Oxygen (O₂) limit within the Network Entry Agreement (NEA) at the SAGE North Sea Limited (SNSL) sub-terminal at St. Fergus between National Grid Gas plc and SNSL. It is proposed to increase the O₂ limit from 10 ppm to 400 ppm.]

Why

. The SAGE facility original design basis was to remove sufficient NGL's from the moderately rich Beryl Field gas and to remove CO₂ and H₂S from the lean, Brae field gas to meet National Gas' specifications. However, within the last decade of operation as Beryl and Brae volumes have declined, SAGE ullage has been utilised by new Norwegian gas volumes, primarily from fields operated by AkerBP. This gas is richer than the original design specification and so there is a reliance on blending to meet export specification. In the event of outage of key leaner gas shippers, primarily Brae or Beryl, a Nitrogen Injection Facility (NIF) is installed as a contingency arrangement to maintain National Transmission System (NTS) export specification in the absence of sufficient blending capacity.

The currently installed nitrogen injection system was designed to allow short term (up to 3 days) ballasting of the export gas. The injection rate required to ensure delivery of an NTS export specification is predicted by calculation based on known pipeline entrant gas volumes during short term outages and/ or process upsets which create 'rich' gas slugs within the transmission system.

AkerBP and their partners have requested a service for processing further volumes of rich gas. The combination of increased volumes of rich Norwegian gas and continuing decline and near term cessation of heritage leaner gas volumes obviates blending alone as a means of achieving existing NTS export specification. Therefore, it is proposed to upgrade the current SAGE Nitrogen Injection Facilities to ensure continued specification compliant operation.

The upgrade of the SAGE Nitrogen Injection Facilities will result in continuous levels of Nitrogen injection which is generated on-site. The technology that delivers the higher purity Nitrogen is the most expensive scheme presented with the longest lead time. The technology that delivers Nitrogen of a slightly lesser purity is significantly simpler, but will require a dispensation from National Grid Gas for the Oxygen content of SAGE Export Gas. The benefits of simplified technology are:

1. Lower energy consumption and therefore less associated CO₂ emissions; and
2. Greater reliability ensuring incremental volumes can be processed and delivered into National Grid via the elongation of SAGE's useful economic life.

How

In accordance with the UNC Transportation Principal Document Section I 2.2.3 (a), the Proposer is seeking to amend the NEA described above via this enabling Modification. On satisfactory completion of the UNC process, the parties to the NEA will be able to amend the agreement.

Commented [PH(G1): The current limit is 10ppm I believe

Commented [PH(G2): This is the solution so should appear in the 'how' section. The 'what' should explain what the problem is with the current limit (briefly here, expanded in the main body)

2 Governance

Justification for Self-Governance

The Proposer considers that this proposed modification meets the self-governance criteria on the basis that the change is unlikely to have a material effect on:

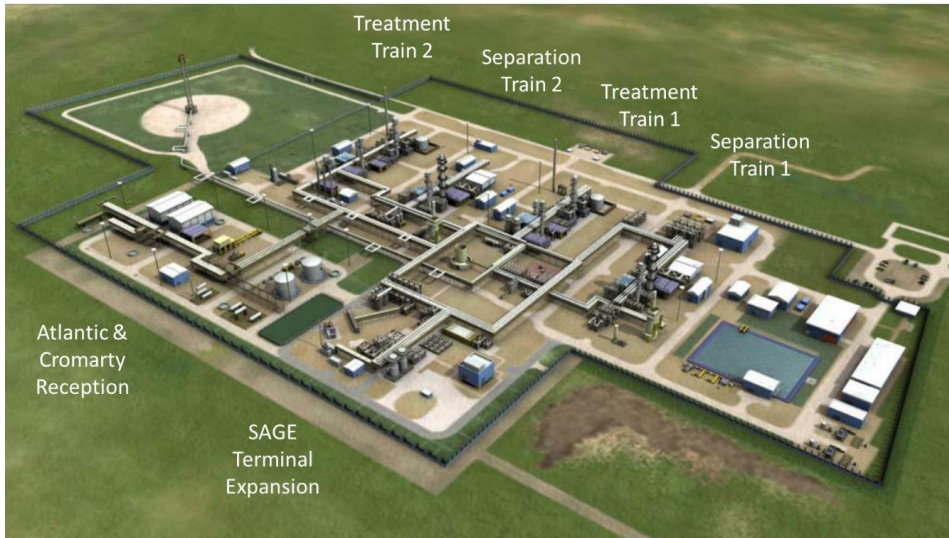
- (aa) **Existing or future gas consumers.** The dilution provided by the SEGAL sub-terminal and Norway through the Vesterled pipeline will result in gas being exported into the NTS which remains within the current UNC limit.
- (bb) **Competition in the shipping, transportation or supply of gas conveyed through pipes or any commercial activities connected with the shipping, transportation or supply of gas conveyed through pipes.** The proposed modification does not disadvantage the competitive position of the other terminal operators at St Fergus.
- (dd) **Matters relating to sustainable development, safety or security of supply, or the management of market or network emergencies.** The export of gas with an O₂ content of less than 400 ppm is unlikely to have a material impact on the management of the network nor safety and security of supply.

Requested Next Steps

This Modification should:

- be considered a non-material change and subject to Self-Governance.
- be assessed by a Workgroup.

3 Why Change?

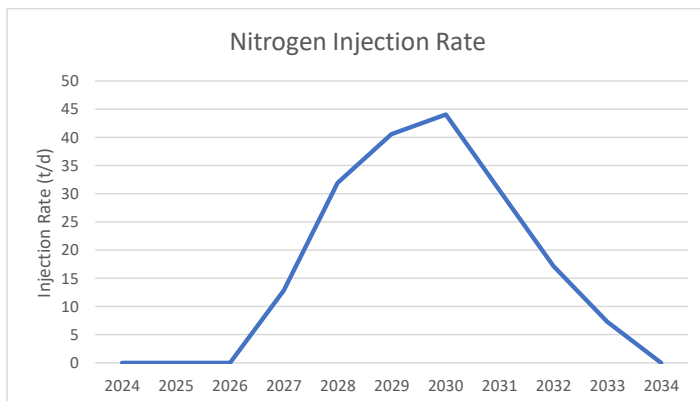


The SAGE facility original design basis was to remove sufficient NGL from the moderately rich Beryl Field gas and to remove CO₂ and H₂S from the lean, Brae field gas to meet National Grid Export specifications. However, within the last decade of operation as Beryl and Brae volumes have declined, SAGE ullage has been utilised by new Norwegian gas volumes, primarily from fields operated by AkerBP. This new gas is richer than the original design specification and so there is a reliance on blending to meet export specification. In the event of outage of key leaner gas shippers, primarily Brae or Beryl, a Nitrogen Injection Facility (NIF) is installed as a contingency arrangement to maintain National Transmission System (NTS) export specification in the absence of sufficient blending capacity.

The NIF system has been used periodically since installation to enable SAGE export gas to meet NTS export specification during short outages and upsets to Beryl and Brae field production. The currently installed nitrogen injection system was designed to allow short term (up to 3 days) ballasting of the export gas. The injection rate required to ensure delivery of an NTS export specification is predicted by calculation based on known pipeline entrant gas volumes during short term outages and/ or process upsets which create 'rich' gas slugs within the transmission system.

The combination of increased volumes of rich Norwegian gas and continuing decline and near term cessation of heritage leaner gas volumes obviates blending alone as a means of achieving existing NTS export specification. Therefore, an upgrade to the SAGE Nitrogen Injection Facilities is required to ensure continued specification compliant operation.

The upgrade will likely involve continuous N₂ injection from 2027 with N₂ generated within the SAGE Terminal fence. It is not feasible to continue to receive N₂ via road tanker for the volumes of N₂ required.



The cost of N₂ generation is dependent on the purity of N₂ generated, with higher purity N₂ cost more from both a capex and opex perspective. For lower purity N₂, (c.99.5% purity) this UNC modification is required.

4 Code Specific Matters

Knowledge/Skills

No additional skills or knowledge are required to assess this modification.

5 Solution

This Modification seeks to amend a Network Entry Provision within the existing SAGE Terminal NEA. The amendment would increase the O₂ upper limit for gas delivered from the SAGE Sub-Terminal System Entry Point into the National Transmission System from 10 ppm to 400 ppm, substantially below the GSMR legal limit of 0.2mol%.

No change to the text of the UNC is required since this is an enabling Modification in accordance with UNC Transportation Principal Document Section I 2.2.3 (a).

Commented [PH(G3): You might also note that this is still substantially below the GSMR legal limit of 0.2mol% (2000ppm)

6 Impacts & Other Considerations

Does this Modification impact a Significant Code Review (SCR) or other significant industry change projects, if so, how?

No

Consumer Impacts

Proposers must provide their view of the impacts on all consumer groups that may be affected; this will be supported by further input from Workgroup participants later in the process. Proposers should also consider Ofgem's Priorities and Objectives (<https://www.ofgem.gov.uk/about-us/our-priorities-and-objectives>).

If 'none', please also explain.

No

What is the current consumer experience and what would the new consumer experience be?

Proposer should explain:

- the common end consumer's experience of the issue the modification seeks to address; and*
- the experience of end consumers if this modification is not implemented.*
- how the end consumer experience will change with the introduction of the modification, setting out both positives and negatives.*

Insert text here.

When filling in the table below please consider and record impacts for each consumer group:

- Domestic Consumers*
- Small non-domestic Consumers*
- Large non-domestic Consumers*
- Very Large Consumers*

Impact of the change on Consumer Benefit Areas:

Area	Identified impact
<p><i>Improved safety and reliability</i></p> <p>The SAGE Terminal is a top tier COMAH site. The modification will facilitate less equipment being used on site and therefore reduce the process safety risk associated with the operation.</p>	Positive
<p><i>Lower bills than would otherwise be the case</i></p> <p>No impact</p>	None
<p><i>Reduced environmental damage</i></p> <p>The modification will facilitate a reduction in total CO2 emissions from a reduction in electricity consumption.</p>	Positive
<p><i>Improved quality of service</i></p> <p>The proposed modification will have no impact on the ability of the SAGE Terminal to continue processing and transporting gas into the NTS.</p>	None
<p><i>Benefits for society as a whole</i></p> <p>The modification will support the continued economic life of the SAGE Terminal and as a consequence, continued security of supply of gas into the UK during a transitional period.</p>	Positive

Cross-Code Impacts

None

EU Code Impacts

None

Central Systems Impacts

None

7 Relevant Objectives

Impact of the Modification on the Transporters' Relevant Objectives:

Relevant Objective	Identified impact
<p>a) <i>Efficient and economic operation of the pipe-line system.</i></p> <p>The ability to continuously inject N2 will permit additional volumes to be transported via the SAGE System in latter years without placing such Norwegian Shippers at an economic disadvantage.</p>	Positive
<p>b) <i>Coordinated, efficient and economic operation of</i></p> <p>(i) <i>the combined pipe-line system, and/ or</i></p>	Positive

Commented [PH(G4)]: Any relevant objective that you claim there is a positive impact for must be evidenced in free text below this table. You could argue for (a) on the basis of supporting the economic life of SAGE, facilitating continued deliveries of gas into the NTS and thus maximising use of the NTS?

(ii) the pipe-line system of one or more other relevant gas transporters. The modification will enable a cost effective solution for continuous N2 injection to be utilised at the SAGE terminal. A lower purity of N2 requires substantially less capex for implementation whilst also simplifying operations and thus increasing uptime.	
c) Efficient discharge of the licensee's obligations.	None
d) Securing of effective competition: (i) between relevant shippers; (ii) between relevant suppliers; and/or (iii) between DN operators (who have entered into transportation arrangements with other relevant gas transporters) and relevant shippers.	None
e) Provision of reasonable economic incentives for relevant suppliers to secure that the domestic customer supply security standards... are satisfied as respects the availability of gas to their domestic customers.	None
f) Promotion of efficiency in the implementation and administration of the Code.	None
g) Compliance with the Regulation and any relevant legally binding decisions of the European Commission and/or the Agency for the Co-operation of Energy Regulators.	None

8 Implementation

[Implementation is required by November 2024] in order that the basis of design for continuous nitrogen injection can be finalised. As Self-Governance procedures are proposed, implementation could be sixteen business days after a Modification Panel decision to implement, subject to no Appeal being raised. This would enable the SAGE Terminal Operator to commence the process of finalising the design basis of the upgrade to the current NIF system.

No implementation costs for other industry parties are anticipated.

Commented [PH(G5): Perhaps add why

9 Legal Text

No change to the text of the UNC is required since this is an enabling Modification in accordance with UNC Transportation Principal Document Section I 2.2.3 (a).

10 Recommendations

Proposer's Recommendation to Panel

Panel is asked to:

- Agree that Self-Governance procedures should apply.
- Refer this proposal to a Workgroup for assessment.

Please remove all green italicised text as you complete the document.